

Capture and Use Multi-Benefit Full Capture Systems June 2023

This information sheet generically describes the categorically certified Capture and Use Multi-Benefit Full Capture Systems and the associated specific design requirements.



Photograph of a Large Scale Capture and Use Tank

Description

Capture and Use Multi-Benefit Full Capture Systems (Capture and Use Systems) harvest stormwater runoff to store for later use or release for immediate use (see photograph above). Captured stormwater may then be used in a variety of ways, including irrigation, toilet flushing, and other non-potable uses. There are numerous designs for these Capture and Use Systems. The Capture and Use Systems may include perforated pipes, chambers, open bottom concrete galleries or other high voids structures designed to temporarily store water prior to use.

Multi-Benefit Certification Limitations

The following systems must be individually certified through the State Water Board's Full Capture System certification process, regardless of whether they otherwise meet the conditions of this certification:

- Pre-manufactured systems (i.e., those manufactured off-site that are generally available for sale); and
- Systems that are designed to contain water for more than 6 hours after conclusion of a storm event in an underground system of pipes, chambers, concrete vaults, or similar void structures connected to exterior inlets or outlets.

Performance, Design, and Maintenance

Permittees and other responsible entities¹ shall design, construct, and maintain Capture and Use Systems in accordance with the following six (6) requirements:

1. Capture and Use Systems shall trap particles that are 5 millimeters or greater at any time during a storm event for the following:
 - a. The peak flow rate generated by the region specific 1-year, 1-hour storm event from the applicable sub-drainage area; or
 - b. The peak flow rate of the corresponding storm drain (if the Capture and Use System is designed to treat flows from the corresponding storm drain that is designed for less than the peak flow rate generated from a 1-year, 1-hour storm event).
2. Capture and Use Systems may include either or both of the following to trap particles for either flow described above in section 1.a or 1.b:
 - a. A screen at the system's inlet, overflow, or bypass outlet; or
 - b. An up-gradient structure designed to bypass flows exceeding the flows as described in section 1.a or 1.b²
3. The peak flow rates referenced in section 1.a, above, shall be calculated using one of the following methods:
 - a. For small drainage areas (generally less than 50 acres) – The Rational equation method which is expressed as $Q = CIA$ where:
 - Q = design flow rate (cubic feet per second)
 - C = runoff coefficient (dimensionless)
 - I = design rainfall intensity (as determined per the rainfall isohyetal map specific for

¹ These requirements also apply to any entity designing a Capture and Use to comply with a Water Board permit or a permittee's requirements implementing the Trash Provisions.

² Upon approval by the appropriate Regional Water Quality Control Board Executive Officer, a 5 millimeter screen and/or upgradient structure may not be required if the Capture and Use System is designed for flood control from flows generated by very large storm events.

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each region) specific to each region, inches/hour

A = subdrainage area (acres)

- b. For large drainage areas (generally more than 50 acres or more) – Other accepted hydrologic mathematical methods that more accurately calculate peak flow rates from large drainage areas.
4. Permittees that have developed a stormwater resource plan pursuant to California Water Code Section 10562 shall only install or approve Capture and Use System designs with groundwater recharge functionality at locations suitable for groundwater recharge.
5. For Capture and Use Systems that incorporate groundwater recharge capacity into the sizing of the Capture and Use System for the purpose of requirements related to the peak flow rates in item 1, above, the percolation rate below the Capture and Use System must either be measured directly or estimated employing conservative hydrogeologic assumptions.
6. A registered California licensed Professional Engineer shall stamp and sign Capture and Use System design plans as required by California Business & Professions Code section 6700, et seq.
7. Because regular maintenance of the Capture and Use System is required to maintain adequate trash capture capacity and to ensure that captured trash does not migrate offsite, the Permittee shall establish a maintenance schedule based on:
 - a. The maintenance frequency as required in the applicable State/Regional Water Board stormwater permit; and
 - b. Site-specific factors including the design trash capture capacity of the Capture and Use System, local storm frequency, and characterization of trash and vegetation accumulation in the corresponding sub-drainage area.